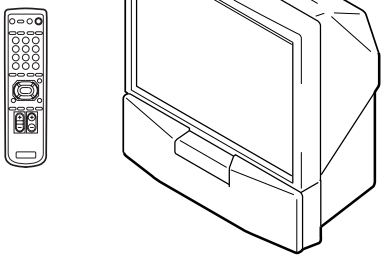
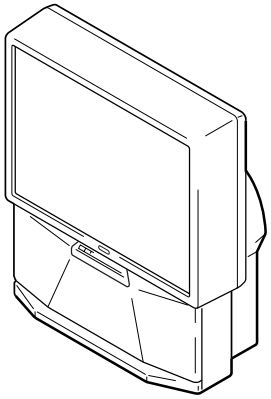
SERVICE MANUAL RG-2 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KP-EF41HK	RM-871	HK	SCC-N71A-A
KP-EF41ME	RM-871	ME	SCC-N72A-A
KP-EF41MN	RM-871	GE	SCC-N69A-A
KP-EF41SN	RM-871	AUS	SCC-N73A-A
KP-EF48HK	RM-871	HK	SCC-N71C-A
KP-EF48ME	RM-871	ME	SCC-N72C-A
KP-EF48MN	RM-871	GE	SCC-N69C-A
KP-EF48SN	RM-871	AUS	SCC-N73C-A

MODEL	COMMANDER	DEST.	CHASSIS NO.
KP-EF53HK	RM-871	HK	SCC-N71B-A
KP-EF53ME	RM-871	ME	SCC-N72B-A
KP-EF53MN	RM-871	GE	SCC-N69B-A
KP-EF53SN	RM-871	AUS	SCC-N73B-A
KP-EF61HK	RM-871	HK	SCC-N71D-A
KP-EF61ME	RM-871	ME	SCC-N72D-A
KP-EF61MN	RM-871	GE	SCC-N69D-A
KP-EF61SN	RM-871	AUS	SCC-N73D-A



KP-EF41HK/EF41ME/
EF41MN/EF41SN



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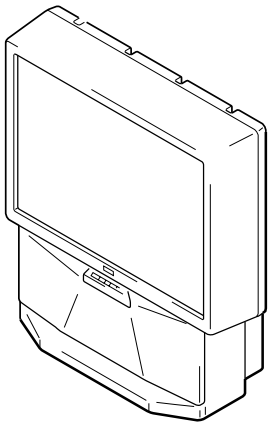
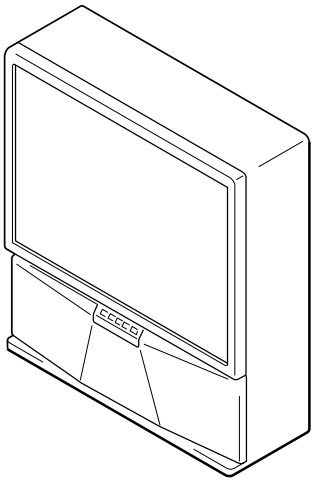
EF48MN/EF48SN



KP-EF53HK/EF53ME/
EF53MN/EF53SN



KP-EF61HK/EF61ME/
EF61MN/EF61SN

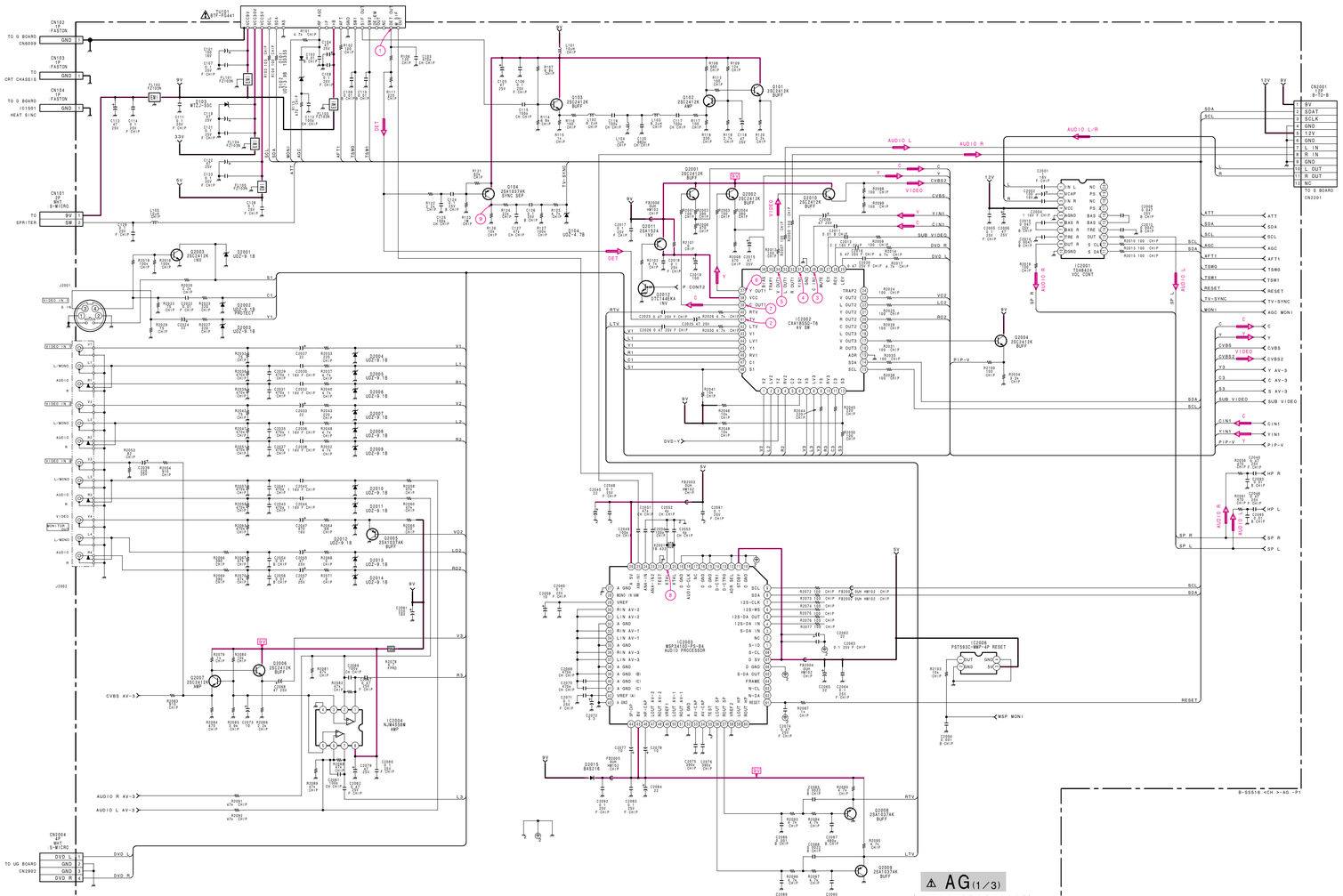
MICROFILM

* Please file according to model size. ...□

41 | 48 | 53 | 61

PROJECTION TV

SONY®

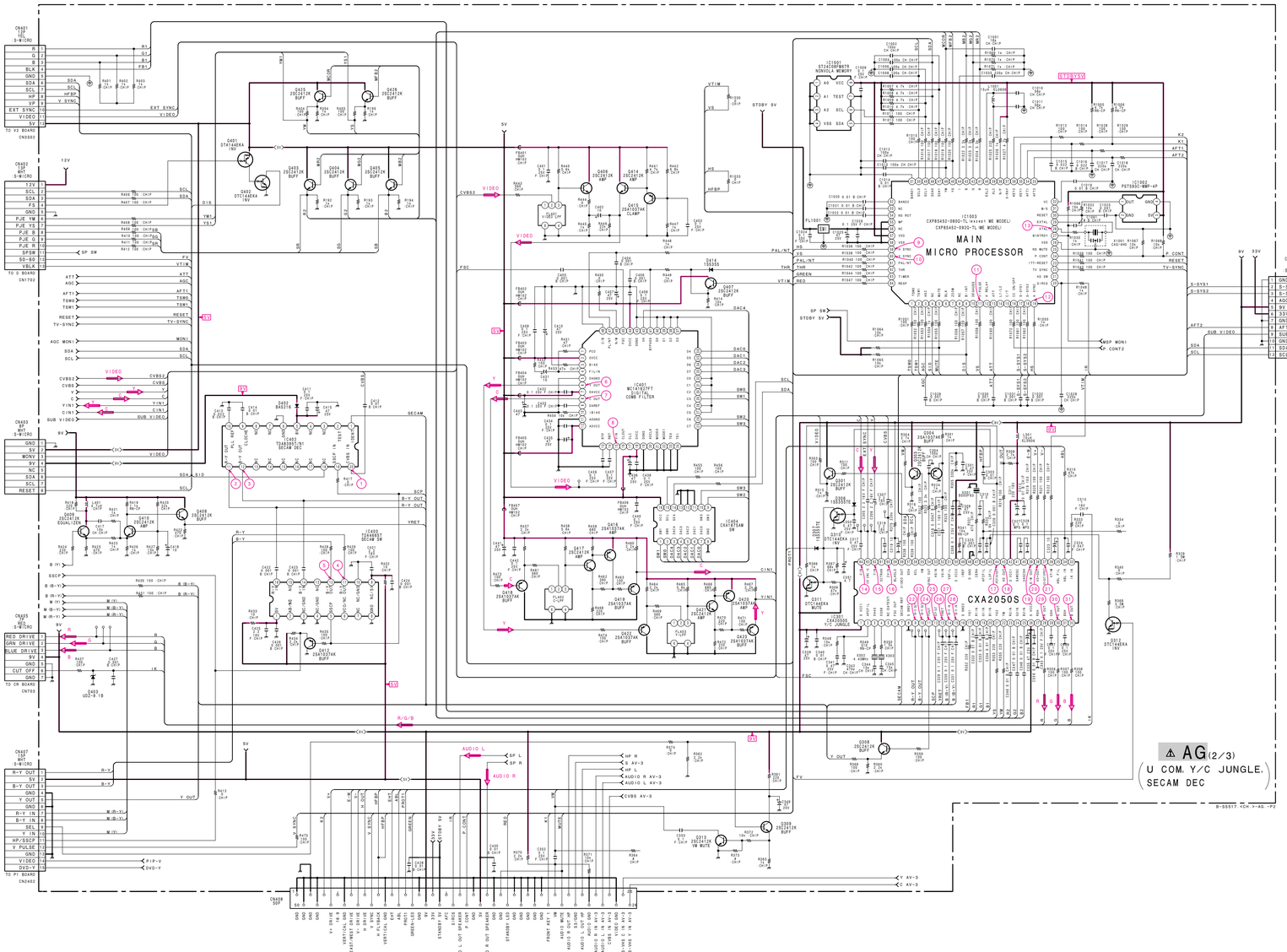


• AG (1/3) BOARD WAVEFORMS

① PAL 1.4 Vp-p (H)	① NTSC 1.6 Vp-p (H)	① SECAM 1.5 Vp-p (H)	② PAL 0.9 Vp-p (H)	② NTSC 1.0 Vp-p (H)	② SECAM 1.0 Vp-p (H)
③ PAL 0.9 Vp-p (H)	③ NTSC 1.5 Vp-p (H)	③ SECAM 2.2 Vp-p (H)	④ PAL 1.5 Vp-p (H)	④ NTSC 1.8 Vp-p (H)	④ SECAM 1.7 Vp-p (H)
⑤ PAL 1.8 Vp-p (H)	⑤ NTSC 2.0 Vp-p (H)	⑤ SECAM 1.7 Vp-p (H)	⑥ PAL 1.5 Vp-p (H)	⑥ NTSC 1.7 Vp-p (H)	⑥ SECAM 1.7 Vp-p (H)
⑦ PAL 0.9 Vp-p (H)	⑦ NTSC 1.6 Vp-p (H)	⑦ SECAM 2.3 Vp-p (H)	⑧ 1.4 Vp-p (18.432 MHz)	⑨ 8.4 Vp-p (H)	

• AG (1/3) BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC2001	1	6.2
	2	12.4
	3	6.3
	4	12.4
	6	6.3
	7	6.3
	8	6.3
	9	6.3
	11	4.9
	12	4.8
	13	6.2
	14	6.3
	15	6.2
	16	6.2
IC2002	1	4.6
	2	4.6
	3	4.6
	4	4.6
	6	8.1
	7	4.6
	8	4.6
	9	4.6
	10	4.6
	11	4.6
	12	8.1
	13	4.8
	14	4.9
	17	4.6
	20	4.6
	22	4.6
	23	4.5
	24	4.6
	25	4.6
	26	4.6
	27	4.6
	29	4.6
	31	4.6
	32	4.7
	33	4.6
	34	4.5
	36	4.6
	37	4.6
	38	8.9
	39	4.6
	40	4.6
	41	4.6
	42	4.6
	43	4.6
	44	4.6
	45	4.6
	46	4.5
	47	4.5
	48	8.1
IC2003	4	0.4
	5	2.6
	6	2.6
	7	2.6
	8	4.8
	9	4.8
	11	5.0
	13	0
	20	2.0
	21	2.3
	23	3.0
	24	1.6
	25	1.6
	26	5.0
	29	2.8
	40	3.9
	41	0
	42	3.9
	44	6.3
	45	8.1
	46	7.2
	53	0
	54	2.2
	56	2.2
	57	2.2
	61	5.2
	67	5.0
IC2004	1	4.9
	2	2.5
	3	2.5
	5	2.6
	6	2.5
	7	4.9
	8	8.8
IC2006	1	5.3
	3	5.0
Q101	B	7.3
	C	8.9
	E	6.7
Q102	B	1.7
	C	7.3
	E	1.0
Q103	B	4.4
	C	8.9
	E	3.8
Q104	B	8.5
	C	1.2
	E	8.9
Q2001	B	4.6
	C	8.9
	E	3.9
Q2002	B	4.6
	C	8.9
	E	3.9
Q2003	B	0
	C	8.0
Q2004	B	4.5
	C	8.9
	E	3.9
Q2005	B	4.5
	E	5.2
Q2006	B	5.2
	C	8.9
	E	4.6
Q2007	B	2.3
	C	5.2
	E	1.9
Q2008	B	2.2
	E	2.8
Q2009	B	2.3
	E	2.9
Q2010	B	4.5
	C	8.9
	E	3.8
Q2011	B	5.5
	C	8.9
	E	8.9
Q2012	B	5.2
	C	0



Schematic diagram
← AG (1/3) board

Schematic diagrams
AG (2/3) board →

• AG (2/3) BOARD WAVEFORMS

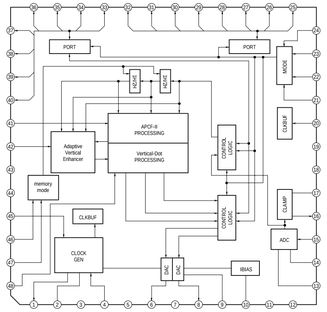
① PAL 0.9 Vp-p (H)	① NTSC 1.0 Vp-p (H)	① SECAM 0.9 Vp-p (H)	② PAL : 0.6 Vp-p (H) SECAM: 1.1 Vp-p (H)	② NTSC 0.7 Vp-p (H)	③ PAL : 0.7 Vp-p (H) SECAM: 1.5 Vp-p (H)	③ NTSC 0.8 Vp-p (H)	④ PAL/SECAM 1.1 Vp-p (H)
④ NTSC 1.3 Vp-p (H)	⑤ PAL/SECAM 1.4 Vp-p (H)	⑤ NTSC 1.6 Vp-p (H)	⑥ PAL 0.9 Vp-p (H)	⑥ NTSC 1.0 Vp-p (H)	⑥ SECAM 1.0 Vp-p (H)	⑦ PAL 0.5 Vp-p (H)	⑦ NTSC 0.6 Vp-p (H)
⑦ SECAM 1.0 Vp-p (H)	⑧ PAL 1.5 Vp-p (H)	⑧ NTSC 1.8 Vp-p (H)	⑧ SECAM 1.6 Vp-p (H)	⑨ 4.6 Vp-p (H)	⑩ 5.3 Vp-p (V)	⑪ 5.3 Vp-p (V)	⑫ 4.6 Vp-p (H)
⑬ 5.0 Vp-p (4MHz)	⑭ PAL 0.5 Vp-p (H)	⑭ NTSC 1.0 Vp-p (H)	⑭ SECAM 1.2 Vp-p (H)	⑮ PAL 0.8 Vp-p (H)	⑮ NTSC 1.0 Vp-p (H)	⑮ SECAM 1.0 Vp-p (H)	⑯ PAL 0.9 Vp-p (H)
⑯ NTSC 1.0 Vp-p (H)	⑯ SECAM 1.0 Vp-p (H)	⑰ 4.8 Vp-p (H)	⑱ 4.9 Vp-p (H)	⑲ 0.5 Vp-p (V)	⑳ 1.3 Vp-p (V)	㉑ 1.3 Vp-p (V)	㉒ PAL : 0.6 Vp-p (H) SECAM: 1.1 Vp-p (H)
㉒ NTSC 0.7 Vp-p (H)	㉓ PAL : 0.7 Vp-p (H) SECAM: 1.5 Vp-p (H)	㉓ NTSC 0.8 Vp-p (H)	㉔ PAL/SECAM 1.0 Vp-p (H)	㉔ NTSC 1.1 Vp-p (H)	㉕ 4.5 Vp-p (H)	㉖ PAL/SECAM 0.9 Vp-p (H)	㉖ NTSC 1.1 Vp-p (H)
㉗ PAL/SECAM 1.1 Vp-p (H)	㉗ NTSC 1.3 Vp-p (H)	㉘ PAL/SECAM 1.4 Vp-p (H)	㉘ NTSC 1.6 Vp-p (H)	㉙ PAL/SECAM 3.4 Vp-p (H)	㉙ NTSC 4.2 Vp-p (H)	㉚ PAL/SECAM 3.4 Vp-p (H)	㉚ NTSC 3.8 Vp-p (H)
㉛ PAL/SECAM 3.4 Vp-p (H)	㉛ NTSC 3.8 Vp-p (H)						

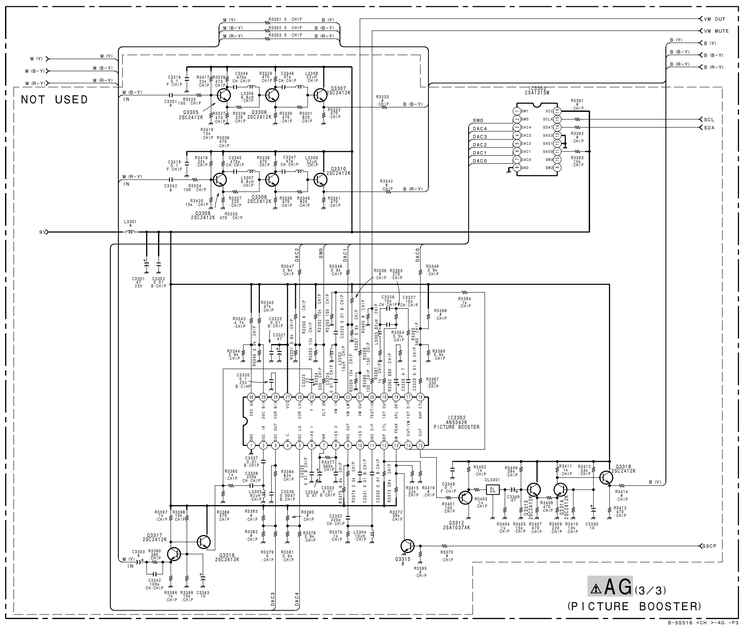
• AG (2/3) BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC301	1	8.9		14	0.7		24	5.2	Q403	B	0
	2	5.6		15	1.5		27	5.2		C	4.9
	3	2.4 (7.4) <2.4>		18	4.9		28	2.6		E	0
	4	7.5 (*) <7.5>		25	2.5		29	*	Q404	B	0
	6	5.2		26	2.5		32	5.2		C	4.9
	7	1.6 (1.6)<5.0>		29	0		33	3.9		E	0
	9	5.8		30	0		34	2.8	Q405	B	0
	10	5.8		33	2.7		35	5.2		C	4.9
	11	3.8		34	0.5		36	0		E	0
	12	0.9		35	0.6		37	5.2	Q406	B	3.8
	13	5.1		36	4.8		38	5.2		C	4.9
	14	5.6		41	0.5		39	2.9		E	3.3
	15	5.5		42	0.5		40	3.0	Q407	B	0.7
	17	0		43	0		41	0		C	4.9
	18	5.6		44	4.9		42	0		E	0.5
	19	5.5		45	2.4		43	0	Q408	B	4.5
	20	5.5		46	0 (5.2) <0>		44	0		C	8.9
	21	0		47	0		45	0		E	3.9
	22	0	IC402	1	1.6 (1.6) <0>		46	0	Q409	B	2.4
	23	5.6		5	8.2		47	5.2		C	8.9
	24	5.5		9	3.3		48	4.8		E	1.8
	25	5.6		10	4.4		49	5.3	Q410	B	3.6
	26	8.9		11	5.8 (5.8) <3.1>		50	4.8		C	4.5
	27	1.9		12	5.8 (5.8) <3.1>		51	0		E	2.9
	28	2.0		18	0 (0) <2.0>		52	0	Q412	B	0.9
	29	2.8		19	0.9		53	0		E	1.6
	30	1.8		20	0.3		54	0	Q414	B	1.4
	31	2.1					56	5.2		C	4.9
	32	1.9	IC403	1	4.9		57	5.2		E	1.5
	33	5.0		5	0.9		59	0.8	Q415	B	0.8
	34	2.6		9	4.9		60	0.7		E	1.4
	35	8.8		11	3.2		61	0 (5.2) <0>	Q416	B	4.3
	36	0.6		12	3.1		62	0		C	3.0
	37	3.0		14	1.2		63	0		E	4.9
	38	3.0		16	1.2		64	0	Q417	B	2.0
	39	4.0	IC404	1	0					C	4.3
	40	4.3		2	0	Q301	B	3.5		E	1.3
	41	4.7		3	0.5		C	8.9	Q418	B	1.0
	42	8.9		4	2.7		E	2.8		E	1.7
	43	3.3		5	0.5	Q303	B	6.1	Q419	B	3.0
	44	3.5		6	0.5		C	8.9		E	3.7
	45	4.6		7	*		E	5.4	Q420	B	4.4
	46	4.2		9	2.8	Q304	B	4.7		C	2.4
	47	2.5		10	2.8		E	5.4		E	4.9
	49	1.8		14	4.9	Q308	B	3.9	Q421	B	2.0
	50	8.9		15	4.9		C	8.9		C	4.4
	51	2.6	IC1001	5	5.2		E	3.2		E	1.4
	52	4.0		6	5.2	Q309	B	0.3	Q422	B	1.0
	53	3.3		8	5.2		C	8.9		E	1.7
	54	4.7	IC1002	1	5.2		E	0	Q423	B	2.3
	55	6.1		3	5.2	Q310	B	4.3		C	3.0
	56	4.8	IC1003	1	0		C	0	Q425	B	0
	58	4.8		2	0	Q311	B	0		C	4.9
	59	4.3		3	5.2		C	3.5		E	0
	60	4.0		4	0 (0) <2.0>	Q312	B	0	Q426	B	0
	61	5.2		5	0		C	3.6		C	4.9
	62	4.1		8	0	Q313	B	0		E	0
	63	3.8		9	5.2		C	0			
	64	4.2		11	0.7	Q401	B	5.1			
IC401	1	2.0		12	5.3		C	0			
	2	5.0		13	0		E	4.9			
	3	2.0		16	5.2	Q402	B	0			
	4	2.0		17	0		C	5.3			
	6	1.0		18	0						
	7	4.9		19	0.7						
	8	1.1		20	5.2						
	9	1.6		21	0						
	10	1.3		22	0						
	12	4.9		23	5.2						
	13	2.6									

(3) Schematic Diagrams of AG (3/3), CB, CG and CR Boards

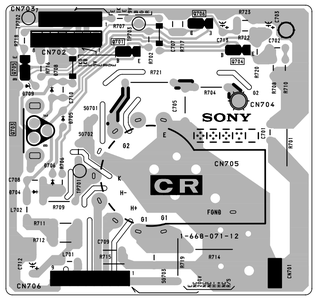
• **AG (2/3) BOARD IC401 MC141627FT**





CR [RED AMP] **CG** [GREEN AMP] **CB** [BLUE AMP]

— CR BOARD —

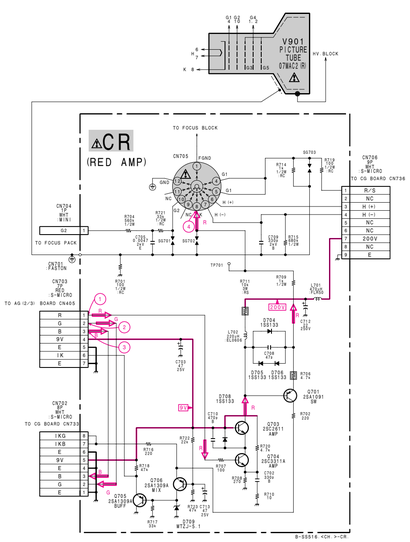


• **CR BOARD WAVEFORMS**

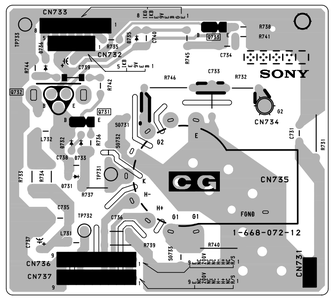
①	PAL/SECAM	①	NTSC
	3.5 Vp-p (H)		4.4 Vp-p (H)
②	PAL/SECAM	②	NTSC
	3.5 Vp-p (H)		3.8 Vp-p (H)
③	PAL/SECAM	③	NTSC
	3.6 Vp-p (H)		3.8 Vp-p (H)
④	PAL/SECAM	④	NTSC
	94.0 Vp-p (H)		117 Vp-p (H)

• **CR BOARD VOLTAGE LIST**

Ref.	Pin No.	Voltage [V]
Q701	B	164
	C	3.3
	E	163
Q703	B	9.2
	C	164
	E	8.9
Q704	B	1.9
	C	8.9
	E	1.5
Q705	B	3.3
	E	3.5
Q706	B	6.1
	C	3.3
	E	4.5



— CG BOARD —

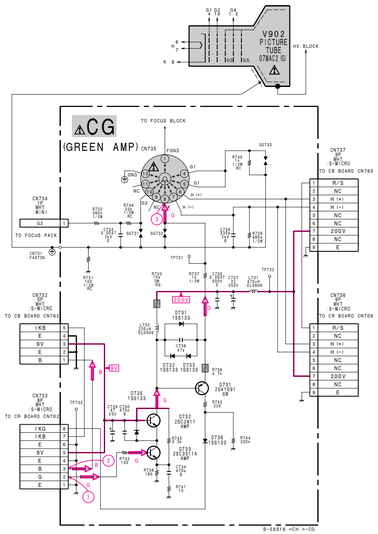


• **CG BOARD WAVEFORMS**

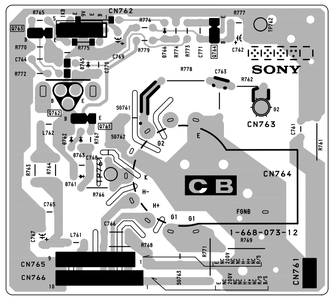
①	PAL/SECAM	①	NTSC
	3.5 Vp-p (H)		3.6 Vp-p (H)
②	PAL/SECAM	②	NTSC
	3.5 Vp-p (H)		3.8 Vp-p (H)
③	PAL/SECAM	③	NTSC
	126 Vp-p (H)		139 Vp-p (H)

• **CG BOARD VOLTAGE LIST**

Ref.	Pin No.	Voltage [V]
Q731	B	152
	C	0
	E	152
Q732	B	9.2
	C	152
	E	8.7
Q733	B	1.9
	C	8.7
	E	1.6



— CB BOARD —

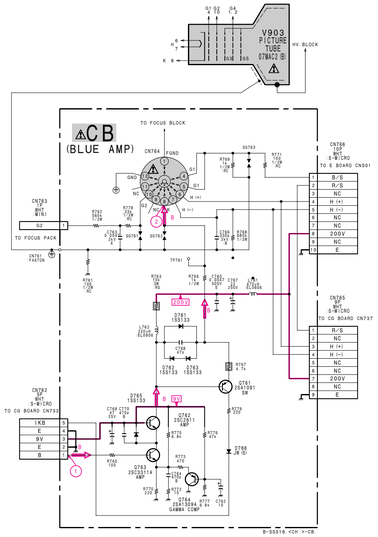


• **CB BOARD WAVEFORMS**

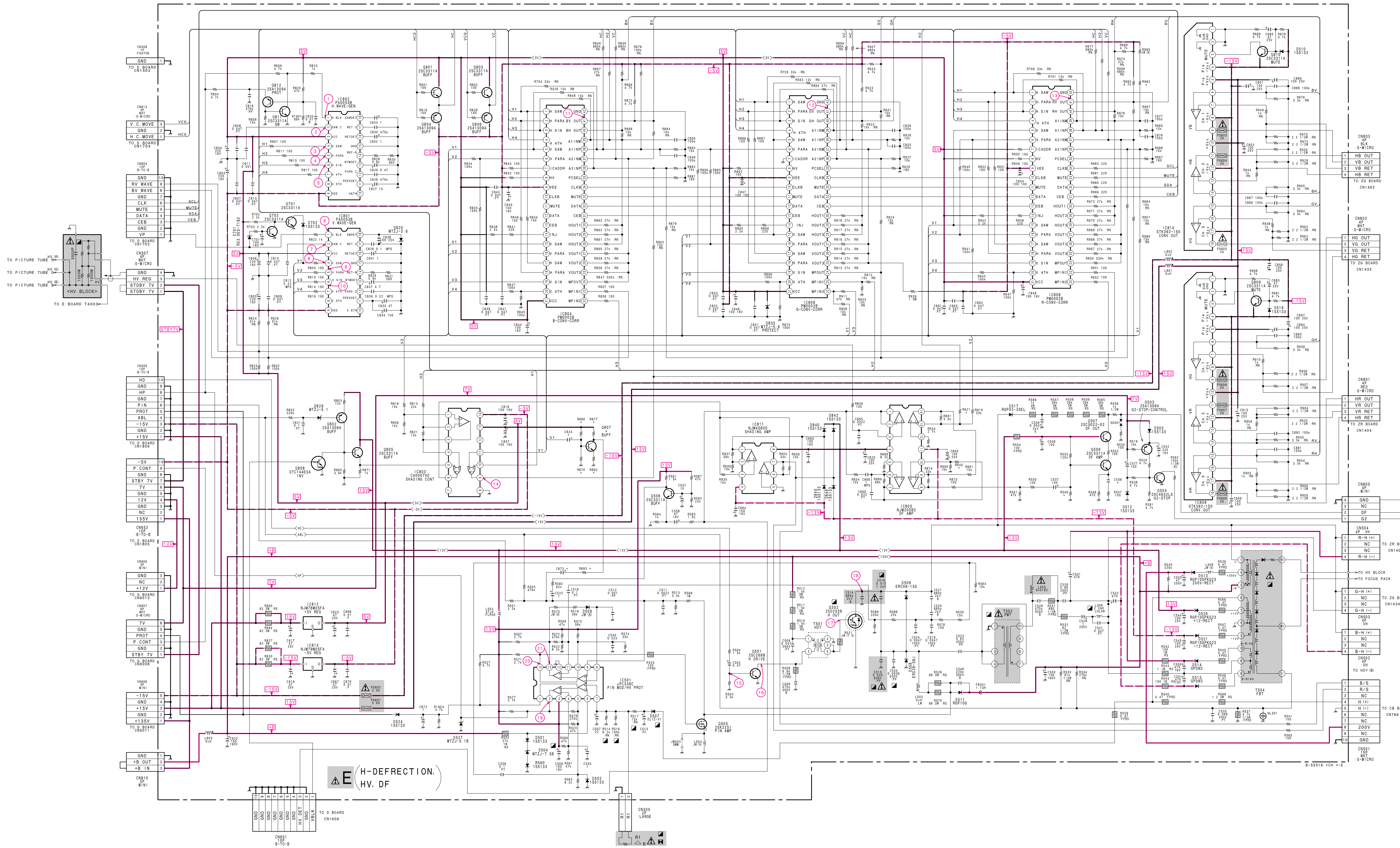
①	PAL/SECAM	①	NTSC
	3.5 Vp-p (H)		3.7 Vp-p (H)
②	PAL/SECAM	②	NTSC
	117 Vp-p (H)		125 Vp-p (H)

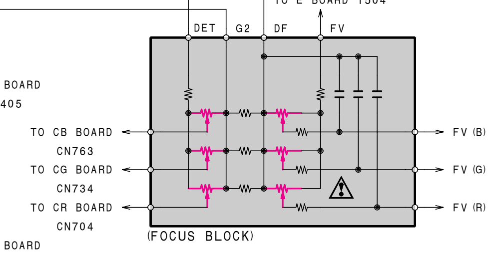
• **CB BOARD VOLTAGE LIST**

Ref.	Pin No.	Voltage [V]
Q761	B	151
	C	9.8
	E	155
Q762	B	9.2
	C	151
	E	8.8
Q763	B	1.9
	C	8.8
	E	1.4
Q764	B	1.1
	E	1.3



(4) Schematic Diagram of E Board





• E BOARD ∗ MARK LIST

Ref No.	41 inch	48/53/61 inch
C824	10	NOT USED
C873	10	NOT USED
Q807	2SC3311A	NOT USED
R549	15k	10k
R866	47k	NOT USED
R870	47k	NOT USED
R877	2.7k	NOT USED
R878	100k :RN	NOT USED
R892	4.7k	NOT USED
R893	2.2k	NOT USED
R945	68k	47k
R982	100k :RN	NOT USED

• E BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC501	1	0
	2	0.7
	3	12.6
	4	6.2
	5	1.9
	6	8.6
	7	8.3
	8	1.7
	9	2.5
	10	4.7
	11	1.9
	13	1.7
	14	10.3
IC801	1	0.2
	2	1.3
	3	5.2
	4	0
	5	–0.9
	6	0
	7	–1.1
	9	–5.1
	11	0.5
	12	–0.8
	13	0.3
	14	1.3
	16	–1.4
	17	1.3
	18	–1.7
IC802	1	0.4
	2	1.3
	3	5.2
	4	0
	5	–0.9
	6	0
	7	–1.1
	9	–5.1
	11	0.6
	12	–0.9
	13	0.3
	14	1.3
	16	–1.8
	17	1.4
	18	–1.6
IC803	1	0
	2	0
	3	0
	4	0
	5	1.5
	6	0
	9	0
	10	0
	11	0
	13	5.2
	14	–5.1
IC804	1	0
	2	–0.9
	3	0
	4	–1.1
	5	0

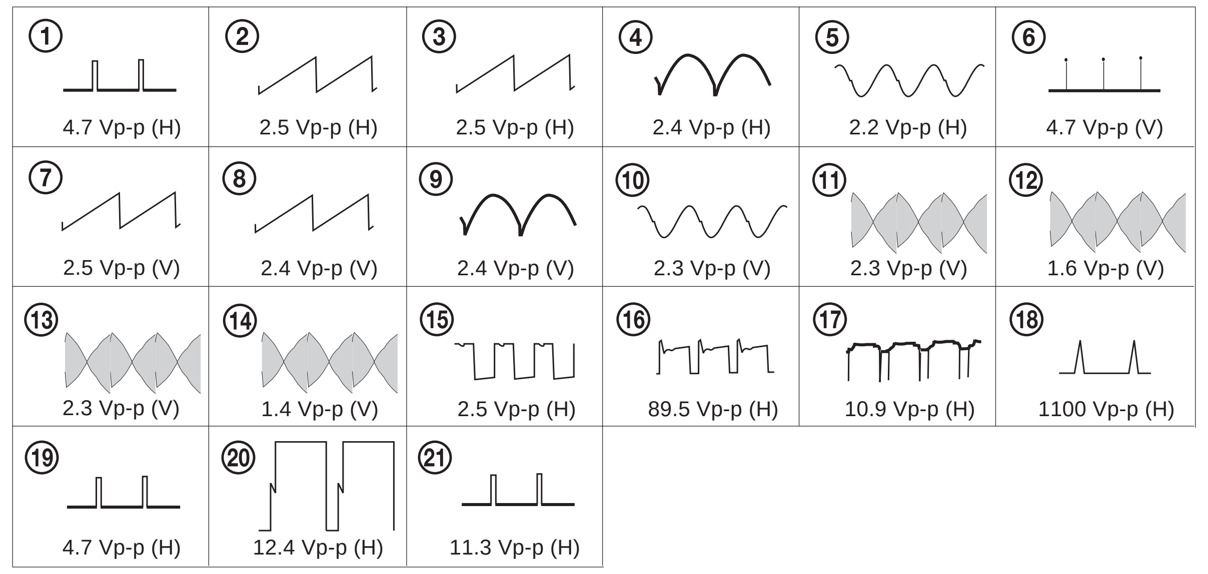
Ref.	Pin No.	Voltage [V]
	6	–0.4
	7	–5.1
	8	5.2
	9	–5.1
	14	–2.1
	15	0
	16	–0.8
	17	0
	18	–0.9
	19	0
	20	–0.6
	21	5.2
	22	0
	23	0
	24	0
	25	0
	26	0
	27	0
	28	0
	29	–0.2
	30	–0.5
	31	4.9
	32	0.2
	33	5.1
	34	4.9
	35	0
	36	0
	37	0
	38	0
	39	0
	40	0.2
	41	0
IC805	1	7.6
	2	7.6
	3	7.4
	4	12.6
	5	0
	6	0
	7	0
	8	–0.8
	9	0
	10	0
	11	–12.6
	12	0
	13	0
	14	0.9
IC806	1	0
	2	–0.9
	3	0
	4	–1.1
	5	0
	6	–0.4
	8	5.2
	9	–5.1
	10	4.9
	11	5.2
	12	0.3
	13	4.9
	14	–2.0
	15	0

Ref.	Pin No.	Voltage [V]
	16	–0.8
	17	0
	18	–0.9
	19	0
	20	–0.5
	21	5.2
	22	0
	23	–0.4
	24	0
	25	0
	26	0
	27	0
	28	0
	29	0
	30	0.3
	31	4.9
	32	0.2
	33	5.2
	34	4.8
	35	0
	36	0
	37	0
	38	0
	39	0
	40	0
	41	0
IC808	1	0
	2	–0.8
	3	0
	4	–1.2
	5	0
	6	–0.4
	7	5.2
	8	5.2
	9	–5.1
	10	4.9
	11	5.1
	12	0.2
	13	4.8
	14	–2.0
	15	0
	16	–0.9
	17	0
	18	–0.9
	19	0
	20	–0.6
	21	5.2
	22	0
	23	0
	24	0
	25	–0.2
	26	0
	27	0
	28	0
	29	0.3
	30	–0.3
	31	4.7
	32	0.2
	33	5.1
	34	4.9
	35	0

Ref.	Pin No.	Voltage [V]
	36	0
	37	0
	38	0
	39	0
	40	0.3
	41	0
IC809	3	–13.4
	4	–14.6
	5	14.8
	6	0
	7	0
	8	–14.6
	9	0
	10	14.8
	11	0
	12	–14.6
	13	0
	14	0
	15	0.4
	16	0.4
	17	–14.6
	18	0
IC810	3	–13.4
	4	–14.6
	5	14.8
	6	0
	7	0
	8	–14.6
	9	0
	10	14.8
	11	0
	12	–14.6
	13	0
	14	0
	15	0
	16	0
	17	–14.6
	18	0.5
IC811	1	0
	2	0
	3	0
	4	–12.6
	6	0
	7	0
	8	12.6
IC812	I	7.0
	O	5.2
IC813	I	–11.5
	O	–5.1
Q501	B	–0.7
	C	49.5
Q502	B	0
	C	140
Q503	B	7.1
	C	0

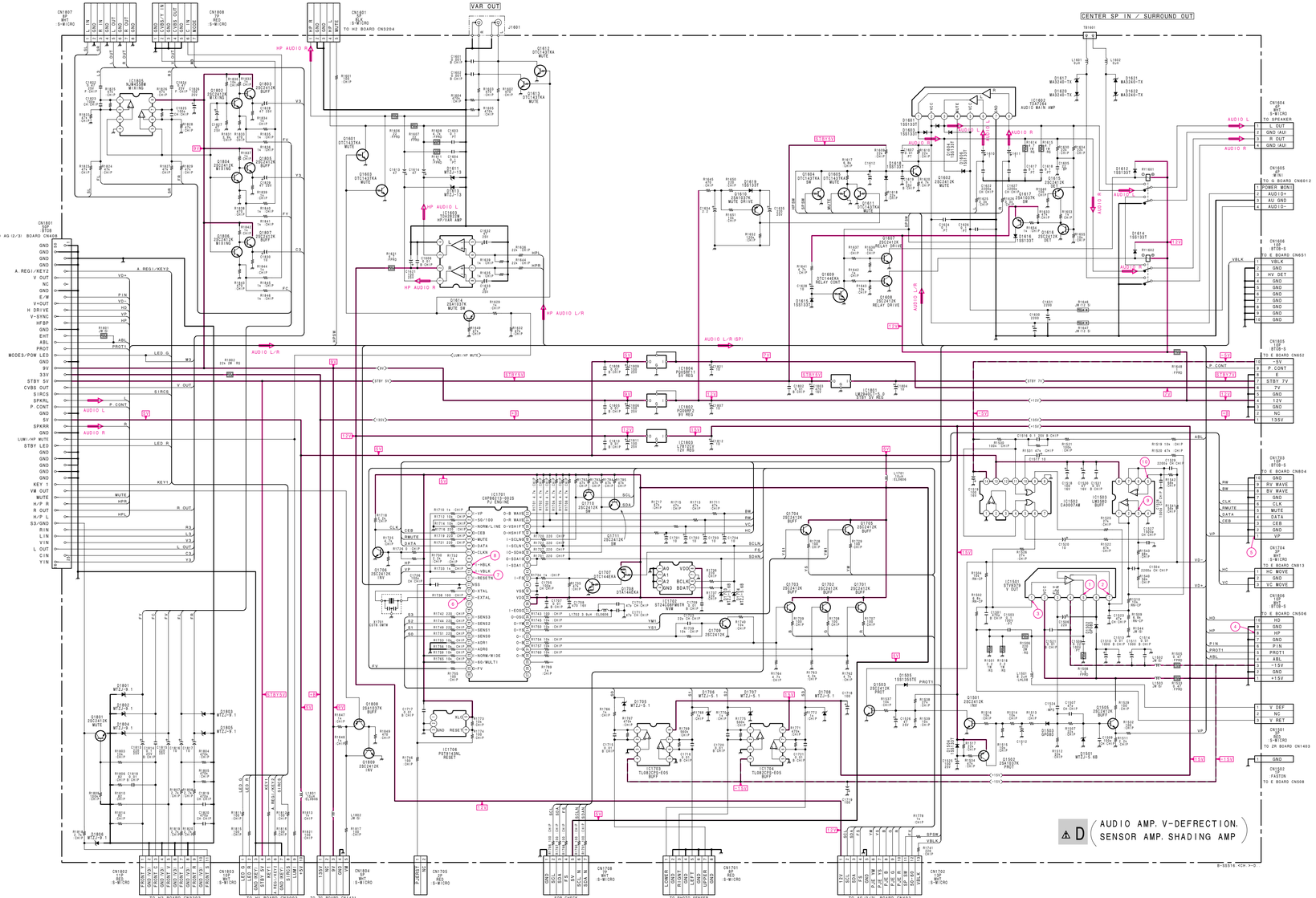
Ref.	Pin No.	Voltage [V]
	E	6.8
Q504	B	0
	C	670
Q505	B	10.3
	C	23.0
Q506	B	1.9
	C	11.9
	E	1.3
Q507	B	12.6
	C	685
	E	12.1
Q508	B	4.1
	C	8.3
	E	3.5
Q701	B	4.8
	C	0
Q702	B	0.2
	C	4.8
Q801	B	2.4
	C	5.2
	E	1.9
Q802	B	5.0
	C	2.2
	E	5.9
Q803	B	2.4
	C	5.2
	E	1.9
Q804	B	2.4
	C	–5.1
	E	1.9
Q805	B	2.2
	C	12.6
	E	1.5
Q806	B	2.4
	C	–5.1
	E	1.8
Q808	B	0
	C	2.2
Q809	B	–14.6
	C	–13.4
	E	–14.6
Q810	B	–14.6
	C	–13.4
	E	–14.6
Q811	B	0
	C	0.4
Q812	B	3.0
	C	0
	E	0.7

• E BOARD WAVEFORMS



Schematic diagrams
← AG (3/3) CB
CG CR boards

Schematic diagram
E board ➡



• D BOARD WAVEFORMS

① 57.5 Vp-p (V)	② 0.5 Vp-p (V)	③ 0.5 Vp-p (V)	④ 4.7 Vp-p (H)	⑤ 4.7 Vp-p (V)
⑥ 3.6 Vp-p (8 MHz)	⑦ 4.7 Vp-p (V)	⑧ 4.7 Vp-p (H)	⑨ 1.3 Vp-p (V)	⑩ 1.3 Vp-p (V)

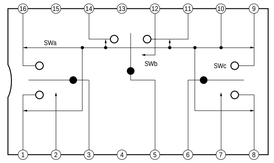
• D BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC1501	1	1.1
	2	14.7
	3	−13.5
	4	−14.6
	5	0
	6	14.6
	7	1.2
IC1502	2	0
	3	0
	4	0
	5	0
	6	0
	9	0
	10	0
	11	−0.6
	13	5.2
	14	−5.1
IC1503	1	3.2
	2	3.2
	3	3.1
	5	3.1
	6	3.1
	7	3.1
	8	5.2
IC1602	1	0
	2	22.8
	3	0
	4	12.7
	5	−22.6
	6	0
	8	0
IC1603	1	4.2
	2	9.2
	3	4.3
	5	0.6
	6	0
	7	0
	8	0.6
IC1701	1	0.2
	2	0
	3	0
	4	2.8
	5	1.3
	6	2.3
	7	0.8
	9	0.8
	10	0.2
	11	5.2
	13	2.5
	14	2.5
	17	4.8
	18	0.7
	19	1.9
	20	4.7
	21	0
	22	0
	23	5.1
	24	5.1
	25	0
	29	0
	30	0
	31	0
	32	0
	33	0
	34	0
	35	0
	36	3.0
	37	2.9
	38	5.2
	39	5.2
	42	5.1
	44	5.0
	45	5.0
	46	4.8
	47	4.9
	48	4.7
	49	5.0
	50	4.2
	51	2.7
	52	2.3
IC1702	5	5.0
	6	4.9
	8	5.2
IC1703	1	8.5
	2	−0.2
	4	−14.6
	6	0
	7	1.9
	8	15.0
IC1704	1	0.7
	2	0
	3	0
	4	−14.6
	6	0
	7	8.9
	8	15.0
IC1706	4	5.2
	5	5.2
IC1801	I	5.2
	O	7.2
IC1802	I	12.8
	O	9.4
IC1803	I	15.0
	O	12.5
IC1804	I	6.9
	O	5.2
IC1805	1	4.8
	2	2.4
	3	2.4
	5	2.4
	6	2.4
	7	4.8
	8	9.4
Q1501	B	0.7
	C	0

Ref.	Pin No.	Voltage [V]
Q1502	B	14.8
	C	2.0
	E	15.0
Q1503	B	−0.6
	C	14.8
	E	0.2
Q1505	B	−0.6
	C	14.8
	E	0.2
Q1601	B	−2.9
	C	0
Q1602	B	2.9
	C	12.7
	E	2.3
Q1603	B	−2.9
	C	0
Q1604	B	0
	C	2.9
Q1605	B	0
	C	2.9
Q1607	B	0
	C	12.8
Q1608	B	0
	C	12.8
Q1609	B	0
	C	0
Q1610	B	12.6
	C	0
	E	12.6
Q1611	B	0
	C	2.9
Q1612	B	−2.9
	C	0
Q1613	B	−2.9
	C	0
Q1614	B	0
	C	−2.9
	E	0.2
Q1615	B	0
	C	0.2
	E	0
Q1616	B	0
	C	0.2
Q1617	B	11.7
	C	4.8
	E	11.8
Q1701	B	0
	C	5.2
	E	0

Ref.	Pin No.	Voltage [V]
Q1702	B	0
	C	5.2
	E	0
Q1703	B	0
	C	5.2
	E	0
Q1704	B	0
	C	5.2
	E	0
Q1705	B	0
	C	5.2
	E	0
Q1706	B	0.2
	C	4.9
Q1707	B	0
	C	5.1
Q1708	B	5.1
	C	0
	E	5.2
Q1710	B	4.8
	C	4.8
	E	0
Q1711	B	4.8
	C	4.8
	E	4.7
Q1801	B	0
	C	0
Q1802	B	2.5
	C	5.2
	E	1.9
Q1803	B	5.2
	C	9.4
	E	4.5
Q1804	B	2.5
	C	5.2
	E	1.9
Q1805	B	5.2
	C	9.4
	E	4.5
Q1806	B	2.5
	C	5.3
	E	1.9
Q1807	B	5.3
	C	9.4
	E	4.6
Q1808	B	7.6
	C	0.7
	E	8.2
Q1809	B	0.7
	C	6.0

• P1 BOARD IC2406 BA7606F



• P1 BOARD WAVEFORMS

① 2.5 Vp-p (20.48MHz)	② PAL/SECAM 1.2 Vp-p (H)	② NTSC 1.2 Vp-p (H)	③ PAL/SECAM 1.0 Vp-p (H)	③ NTSC 1.4 Vp-p (H)	④ PAL/SECAM 1.3 Vp-p (H)
④ NTSC 1.6 Vp-p (H)	⑤ PAL/SECAM 1.2 Vp-p (H)	⑤ NTSC 1.2 Vp-p (H)	⑥ PAL/SECAM 1.3 Vp-p (H)	⑥ NTSC 1.6 Vp-p (H)	⑦ PAL/SECAM 1.0 Vp-p (H)
⑦ NTSC 1.3 Vp-p (H)					

• P1 BOARD VOLTAGE LIST

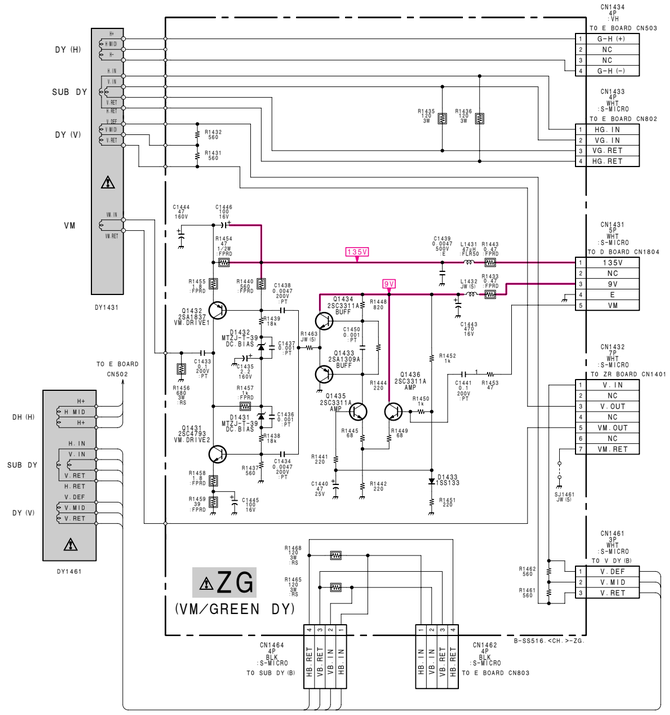
Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC2401	1	4.4		17	4.8		14	4.8	Q2408	B	1.7		C	0.7
	2	5.0		18	4.7		15	4.8		C	4.5	Q2427	B	1.8
	3	3.9		20	2.6		16	5.0		E	2.3		E	2.5
	4	3.2		21	*	IC2802	1	3.3	Q2409	B	4.5	Q2428	B	1.5
	5	3.2		22	*		2	3.3		C	8.8		E	2.2
	10	0		23	*		3	2.9		E	3.8	Q2429	B	1.5
	12	3.2		24	*		4	3.0	Q2410	B	2.3		E	2.3
	13	3.2		25	*		5	2.3		C	4.5	Q2430	B	3.3
	14	3.1		26	1.1		9	5.0		E	1.6		E	3.9
	15	4.9		27	*		10	5.0	Q2411	B	0	Q2431	B	3.2
	16	8.8		28	*		11	5.0		E	0.8		E	3.7
IC2402	1	4.9		29	0.9		12	2.1	Q2412	B	0	Q2432	B	3.2
	5	0.5		30	*		13	3.0		C	8.8		E	3.8
	9	4.9		31	5.0		14	2.9	Q2413	B	3.0			
	11	3.2		32	4.1		15	3.3		C	0.4	Q2801	B	4.8
	12	3.1	IC2405	1	2.4		16	8.8	Q2414	B	0		C	8.8
	14	1.6		2	2.4	IC2803	1	4.4		C	5.0		E	4.1
	16	1.6		3	2.2		2	1.5		E	0.3	Q2802	B	2.6
IC2403	1	4.1		4	4.6		3	3.9	Q2415	B	2.9		C	4.8
	2	*		5	4.4		4	4.0		C	0.3		E	2.0
	3	0.9		6	0.4		5	4.0		E	0.5	Q2803	B	4.1
	4	*		7	8.0		8	8.8	Q2416	B	0.9		C	8.8
	5	*		8	5.2		10	8.8		E	1.5		E	3.6
	6	1.1		11	7.1		11	8.8	Q2417	B	0	Q2804	B	0
	7	*		12	4.0		12	3.9		C	0		C	4.1
	8	*		14	1.8		13	3.1		E	0.8		E	1.9
	9	*		21	4.1		14	3.2	Q2418	B	0.7	Q2805	B	8.1
	10	*		25	8.0		15	4.4		E	1.5		C	4.4
	11	*		26	3.7		16	8.8	Q2419	B	0.8		E	8.8
	12	2.6		28	3.5	Q2301	B	3.3		E	1.4	Q2806	B	4.4
	15	0.3		29	4.9		C	8.8	Q2420	B	8.2		C	8.1
	17	2.2		30	1.9		E	3.0		C	5.7		E	3.9
	19	2.7		31	1.7	Q2401	B	0		E	8.8	Q2807	B	4.1
	20	1.1		32	4.1		E	0.8	Q2421	B	3.1		C	5.4
	21	2.7	IC2406	1	3.3	Q2402	B	6.8		C	8.2		E	3.5
	22	2.0		2	0.3		C	8.8		E	2.6	Q2808	B	3.5
	23	2.1		3	1.8		E	6.0	Q2422	B	5.8		C	8.8
	24	5.0		5	1.5	Q2403	B	2.7		C	8.8		E	2.8
	25	4.9		6	1.5		C	6.8		E	5.0	Q2809	B	3.6
	26	5.0		7	0.3		E	2.1	Q2423	B	0.7		C	6.1
IC2404	1	0.4		8	3.0	Q2404	B	4.5		C	0.7		E	2.8
	2	2.5		9	3.0		C	8.8	Q2424	B	0.7	Q2810	B	2.8
	3	2.0		10	0.7		E	3.9		C	0.7		C	8.8
	5	0		11	2.9	Q2405	B	0	Q2426	B	0.2		E	2.2
	6	5.0		12	0.3		E	0.8						
	8	0.8		13	5.0	Q2406	B	2.1						
	9	0		14	2.9		C	8.8						
	10	0.9		16	3.0		E	1.5						
	13	5.0	IC2801	9	0									
	14	0		10	5.0									
	15	0.7		11	5.0									
	16	0.6		12	5.0									

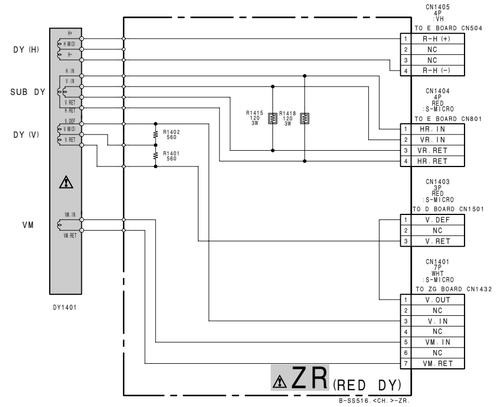
• V2 BOARD WAVEFORMS

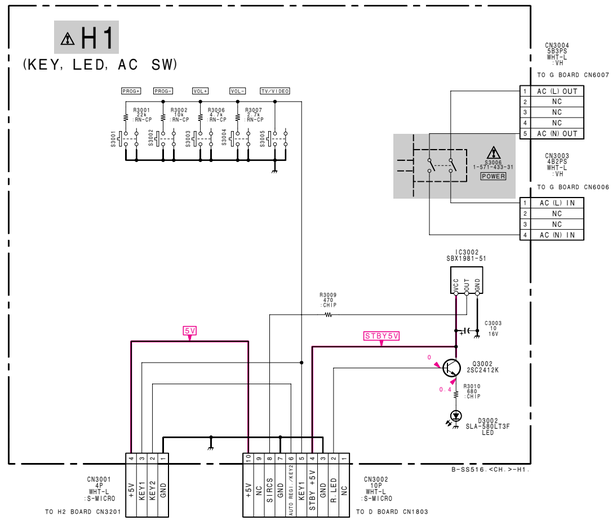
① 4.3 Vp-p (12MHz)	
② 4.7 Vp-p (V)	
③ 4.7 Vp-p (H)	

• V2 BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC3501	1	0		38	5.1	Q3506	B	0	Q3509	B	0
	2	5.1		39	5.1		C	0		C	5.2
	3	0		41	2.5	Q3507	B	0		E	0
	4	0		42	2.6		C	5.2	Q3510	B	0
	5	0		43	0		E	0		C	5.2
	23	2.3		44	5.1	Q3509	B	0		E	0
	25	2.1		47	5.2		C	5.2			
	26	2.6		49	4.8		E	0			
	31	1.7		50	4.9	Q3510	B	0			
	32	0	Q3501	B	0		C	5.2			
	33	0		C	5.2		E	0			
	34	0		E	0	Q3502	B	0			
	35	0					C	0			
	36	0.6									
	37	0.2									



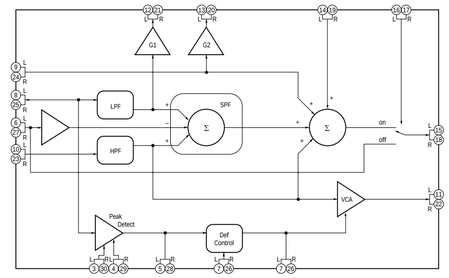


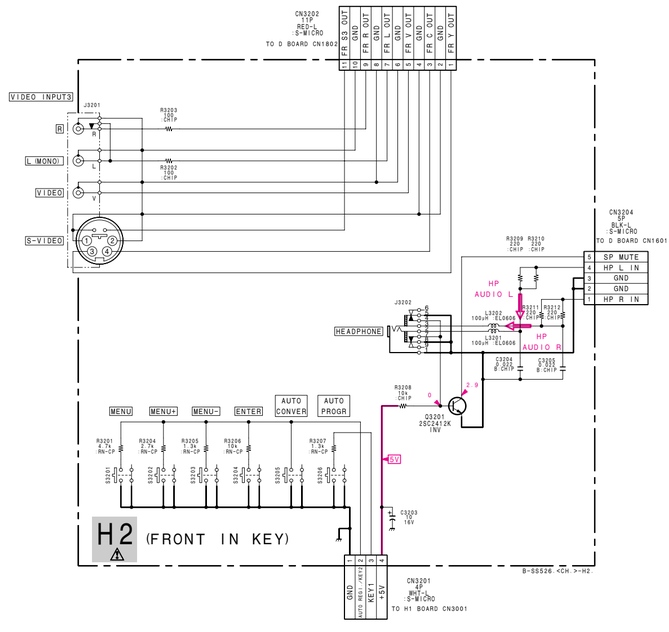


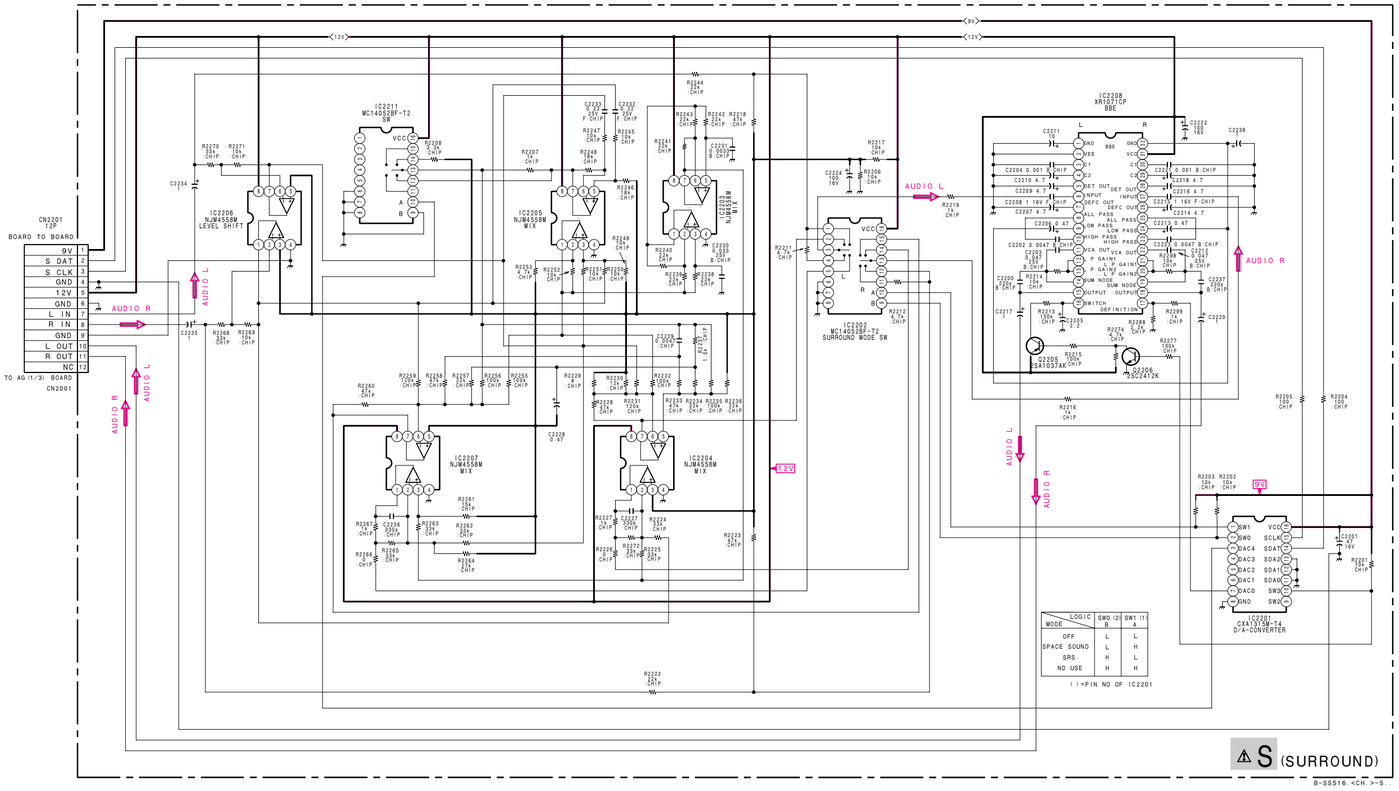
• ZG BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
Q1431	B	1.0	Q1433	B	6.1	Q1435	B	2.3
	C	70.1		E	6.4		C	6.1
	E	0.5					E	1.7
Q1432	B	138	Q1434	B	6.8	Q1436	B	2.3
	C	70.1		C	9.3		C	9.3
	E	139		E	6.4		E	1.6

• S BOARD IC2208 XR1071CP





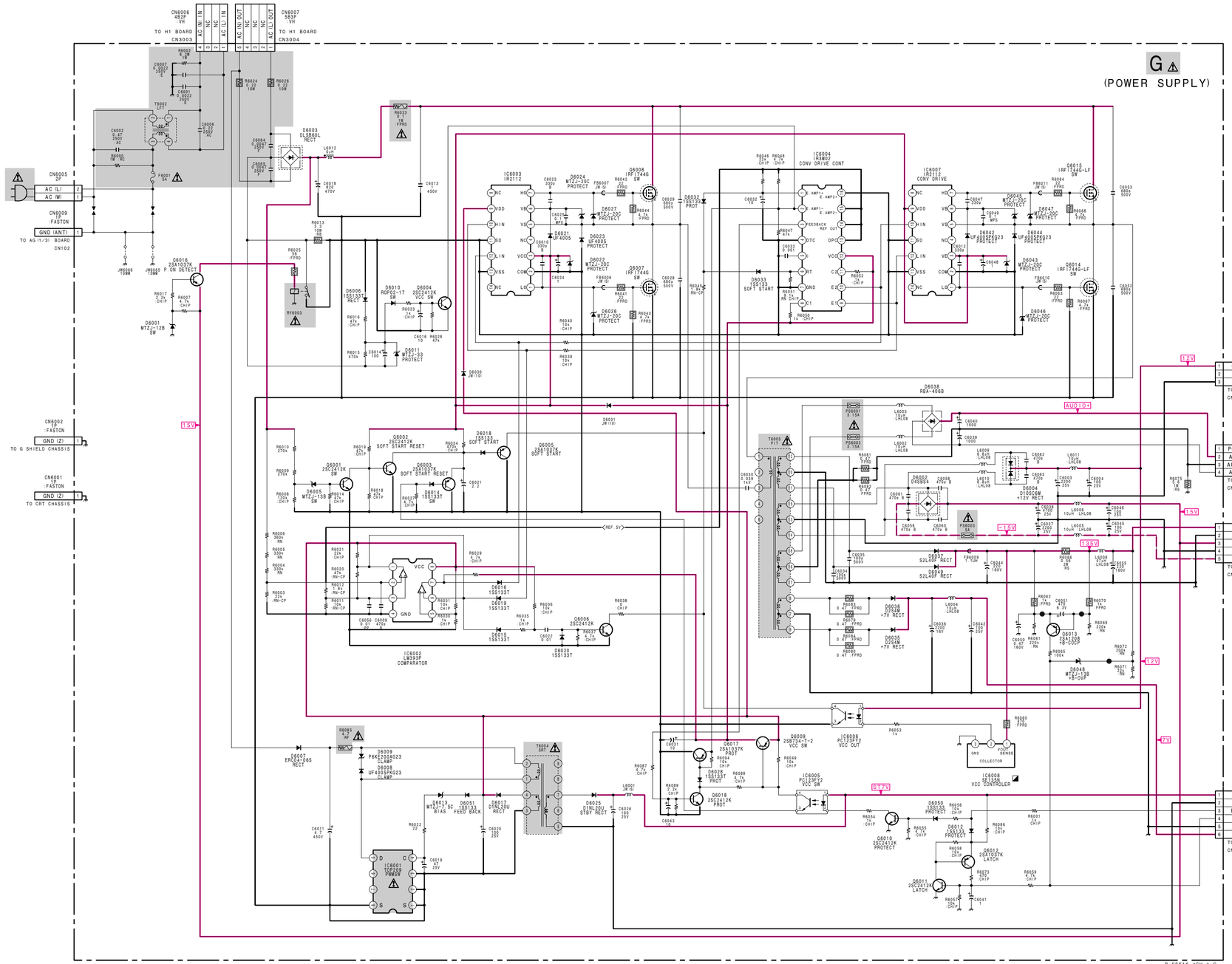


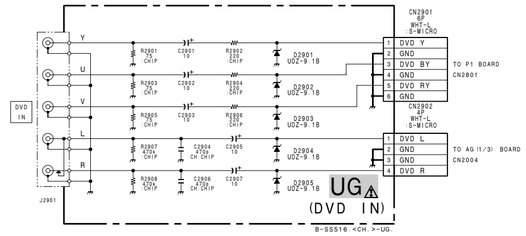
• S BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC2201	1	0		16	12.3		6	6.2		4	6.0		25	5.9
	2	0	IC2203	1	6.2		7	6.2		5	6.0		26	6.0
	3	0.5		2	6.2		8	12.3		6	6.0		27	5.9
	7	8.5		3	6.3	IC2206	1	6.2		7	5.9		28	5.9
	10	8.1		5	6.2		2	6.2		8	6.0		29	6.0
	14	4.8		6	6.2		3	6.2		9	5.9		30	5.8
	15	4.7		7	6.2		5	6.2		10	6.0		31	12.3
	16	8.9		8	12.3		6	6.2		11	6.0		32	5.9
IC2202	1	6.2	IC2204	1	6.2		7	6.2		12	6.0			
	2	6.3		2	6.3		8	12.3		13	6.0	IC2211	10	0
	3	6.3		3	6.2	IC2207	1	6.2		14	6.0		12	6.2
	4	6.2		5	6.2		2	6.3		15	0		13	6.2
	5	6.2		6	6.2		3	6.2		16	6.7		14	6.2
	9	0		7	6.3		5	6.2		17	5.9		16	12.3
	10	0		8	12.3		6	6.2		18	5.9			
	11	6.3	IC2205	1	6.2		7	6.2		19	5.9	Q2205	B	12.5
	12	6.3		2	6.2		8	12.3		20	6.0		C	12.3
	13	6.2		3	6.2	IC2208	1	6.0		21	6.0		E	12.3
	14	6.2		5	6.2		3	6.0		22	6.0			
	15	6.2								23	6.0	Q2206	B	0.8
										24	6.0		C	0

Schematic diagrams ← H1 H2 S ZG ZR boards

Schematic diagrams G UG boards →





• **G BOARD VOLTAGE LIST**

Ref.	Pin No.	Voltage [V]
IC6001	4	5.9
	5	286
IC6002	1	0.2
	2	6.3
	3	4.4
	5	1.4
	6	0.2
	7	12.1
	8	14.5
IC6003	1	14.4
	3	14.4
	5	0.4
	6	15.1
	7	0.4
	9	14.5
	10	0.5
	12	11.6
IC6004	1	3.9
	2	4.8
	3	0
	5	1.7
	6	3.9
	8	14.1
	9	5.8
	10	6.4
	11	14.4
	12	14.5
	13	5.3
	14	5.3
	15	5.3
IC6005	1	7.3
	2	6.1
	3	4.4
	4	13.8
IC6006	1	13.0
	2	11.9
	4	3.0
IC6007	1	6.2
	2	0
	3	14.5
	5	146
	6	159
	7	150
	9	14.5
	10	6.4
	12	5.8
IC6008	1	138
	2	11.5
Q6001	B	0.8
	C	0
Q6002	B	0
	C	13.8
Q6003	B	*
	E	13.8
Q6004	B	0
	C	4.8
Q6005	B	5.1
	E	3.0
Q6006	B	0
	C	3.1
Q6007	B	14.3
	C	0.4
Q6008	B	0.4
	C	292
	E	0.4
Q6009	B	13.8
	C	14.5
	E	14.5
Q6010	B	0.7
	C	0
Q6011	B	0
	C	7.3
Q6012	B	7.3
	C	0
	E	7.2
Q6013	B	138
	C	0
	E	139
Q6014	B	16.1
	C	147
Q6015	B	150
	C	292
	E	147
Q6017	B	*
	E	4.8
Q6018	B	0
	C	13.8

6-5. SEMICONDUCTORS

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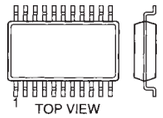
CXA1875AM-T4
HEF4053BT
TDA4665T-T



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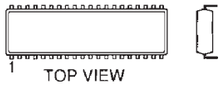

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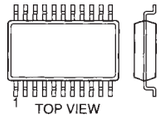

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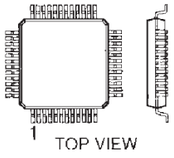

48pin QFP

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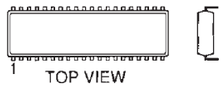

64pin DIP

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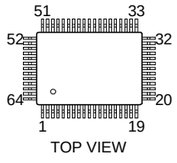
CXP85452-092Q-TL



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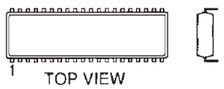

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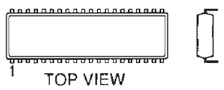
IR3M02A



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TA7812S
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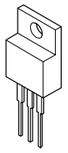

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TL082CPS-E05
TL082M
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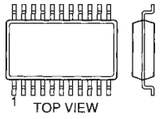

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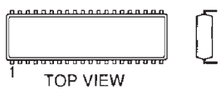

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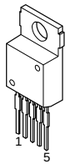

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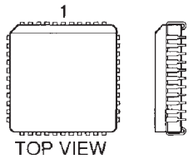

68pin QFJ

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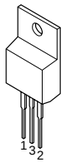

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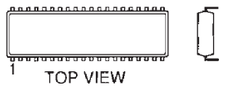

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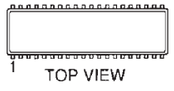

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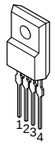

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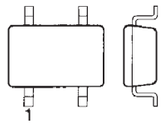

4pin Chip

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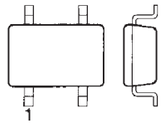

5pin Chip

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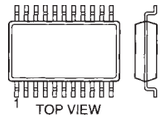

28pin SOP

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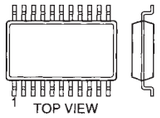

32pin SOP

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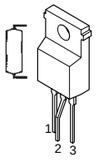

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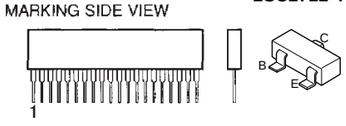

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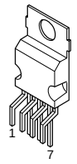

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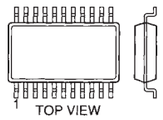

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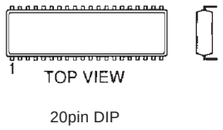

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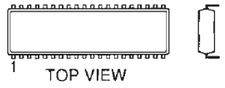

32pin DIP

DTA144EKA-T146
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DTC114EKA-T146
DTC124EK
DTC124EKA-T146
DTC143TKA-T146
DTC144EKA
DTC144EKA-T146
2SA1037AK-T146-QR
2SA1037AK-T146-R
2SA1037K-T-146-QR
2SA1162G
2SC1623-L5L6
2SC2412K-T-146-QR
2SC2712-YG
2SC2712-YG-TE85L

KP-EF41HK/ME/MN/SN, EF48HK/ME/MN/SN,
EF53HK/ME/MN/SN, EF61HK/ME/MN/SN RM-871

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2SA1309A-QRSTA
2SC2785-HFE
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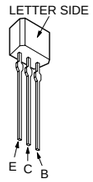

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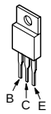

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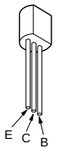

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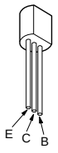

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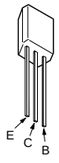

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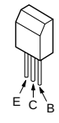

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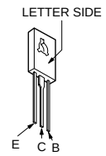

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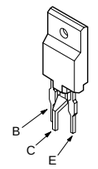

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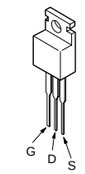

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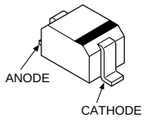

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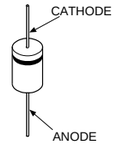

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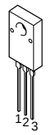

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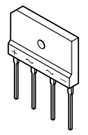

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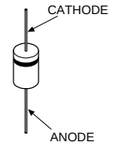

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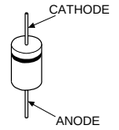

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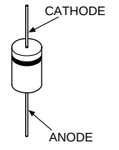

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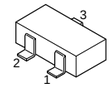

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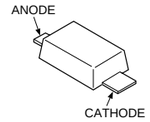

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RD3.0ES-T1B2
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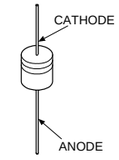

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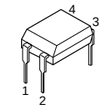

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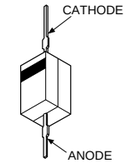

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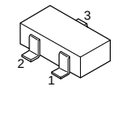

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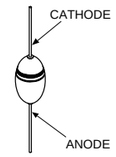
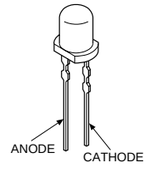
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